

Warm and Cold Snakes in AGS 4 Compensation Quads per Snake

One possible solution

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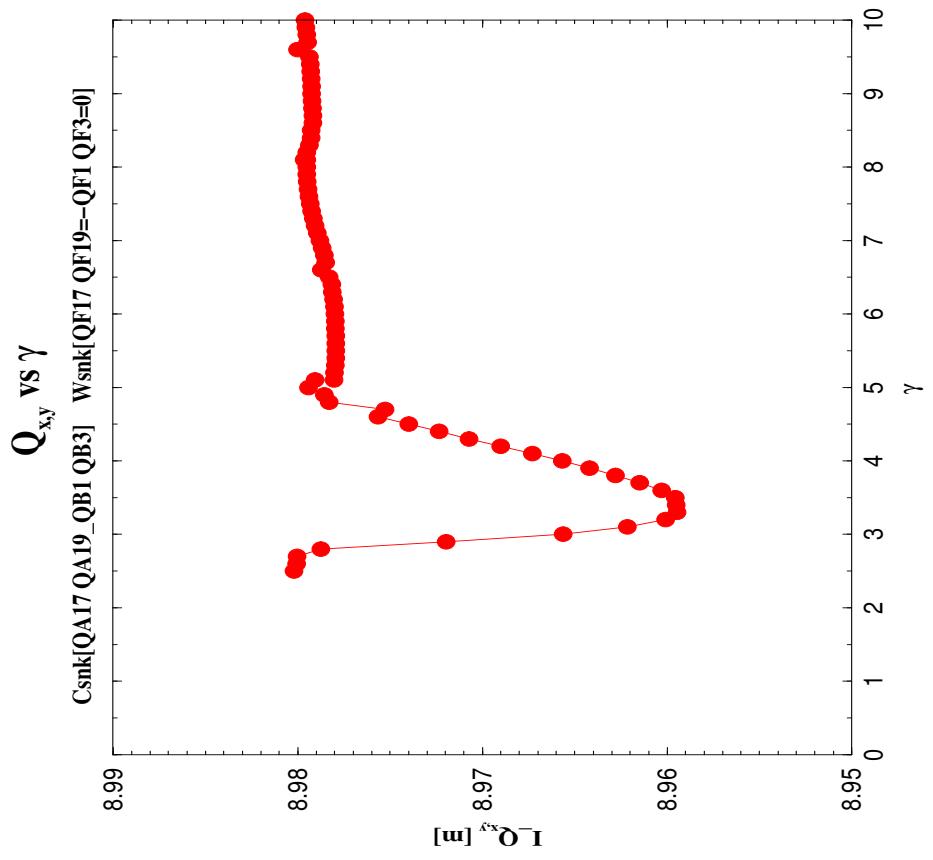
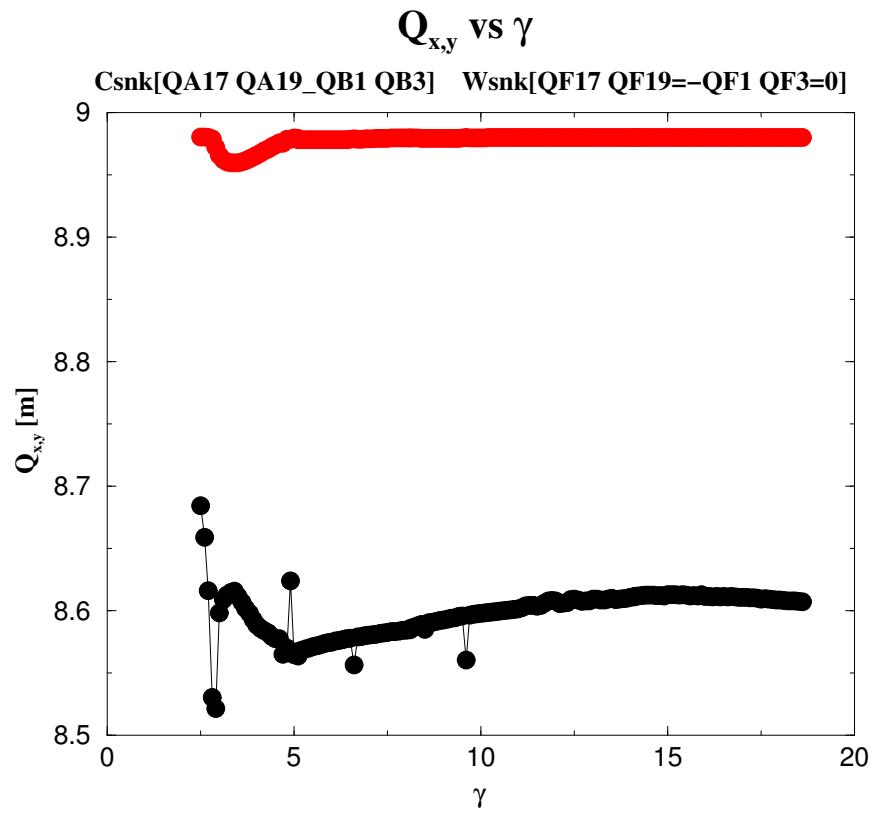
Location an Power Supplies for Compensation Quads

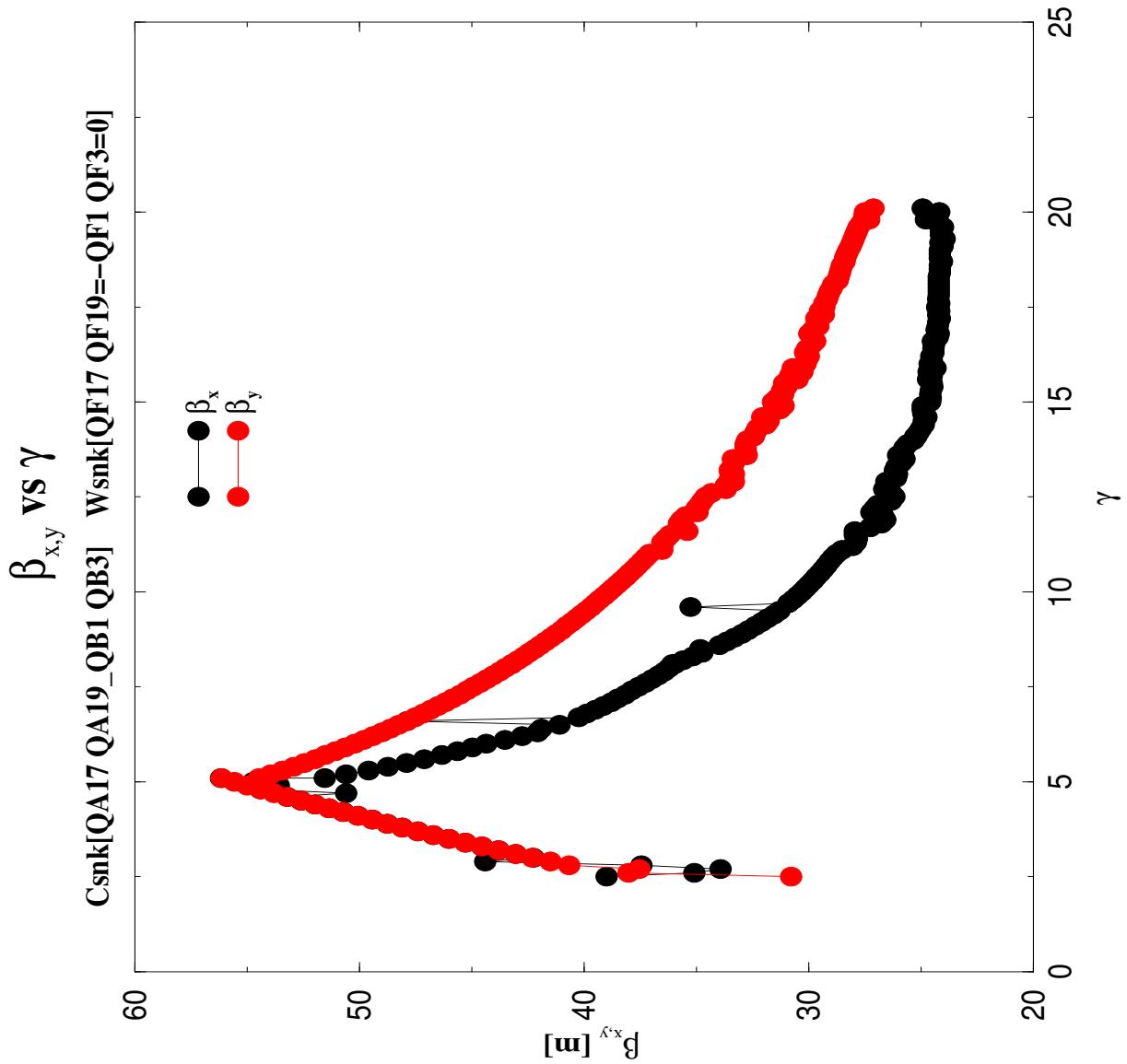
- For Cold Snake at A20
 - QA17 A Floating PS is also powering the Horizontal Tune Quad
 - QA19 In Straight Section A19. Thin Quad PS_A19
 - QB1 In Straight Section B1. Thin Quad PS_B1
 - QB3 In Straight Section B3. Polarization Quad PS_B3
- For Warm Snake at E20
 - QE17 A Floating PS is also powering the Horizontal Tune Quad
 - QE19 In Straight Section A19. Thin Quad PS_E19
 - QF1 In Straight Section B1. Thin Quad PS_E19
 - QF3 In Straight Section B3. Polarization Quad No PS

History of the Solution

- Alfredo Luccio generated a Solution at $\gamma=2.5$
- The Solution was optimized for
 - Tune $Q_y \sim 8.98$
 - $\eta_x \sim 4$ [m] and $\beta_x < 40$ [m] at $\gamma=2.5$
- Using Alfredo's “tools” (scripts etc.)
 - A “possible solution” was obtained in the range $2.5 < \gamma < 24$

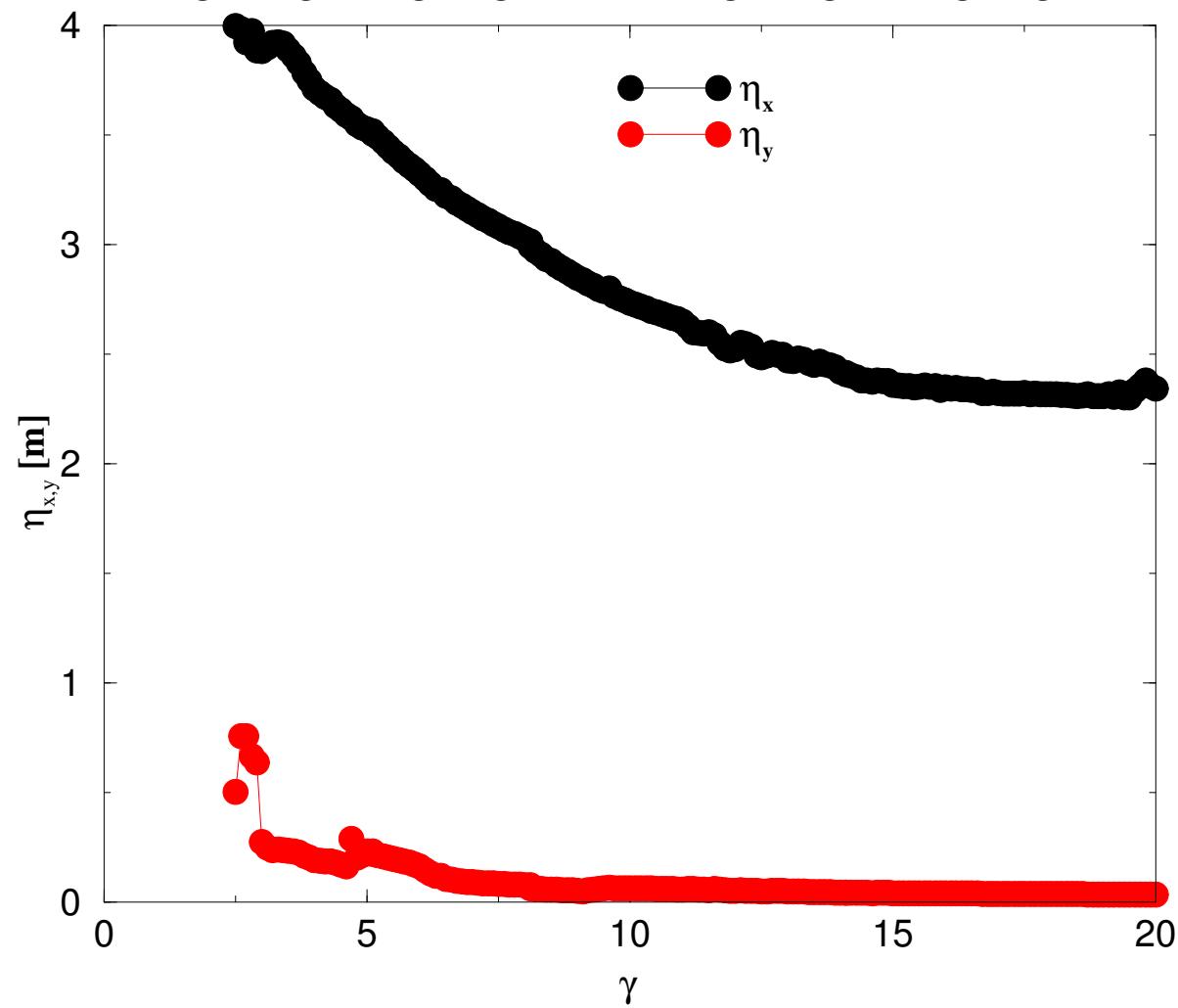
Tunes as function of γ



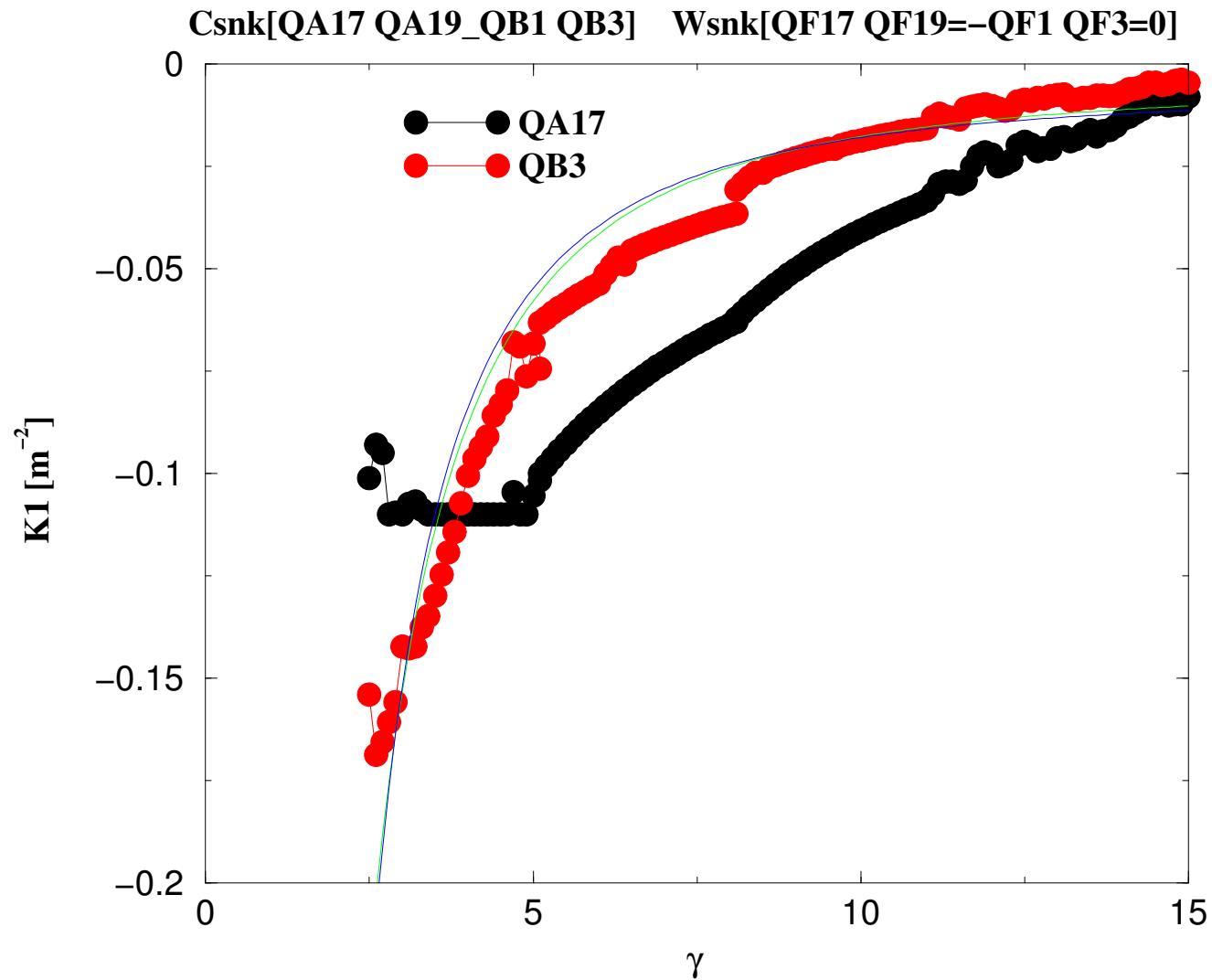


$\eta_{x,y}$ VS γ

Csnk[QA17 QA19_QB1 QB3] Wsnk[QF17 QF19=-QF1 QF3=0]

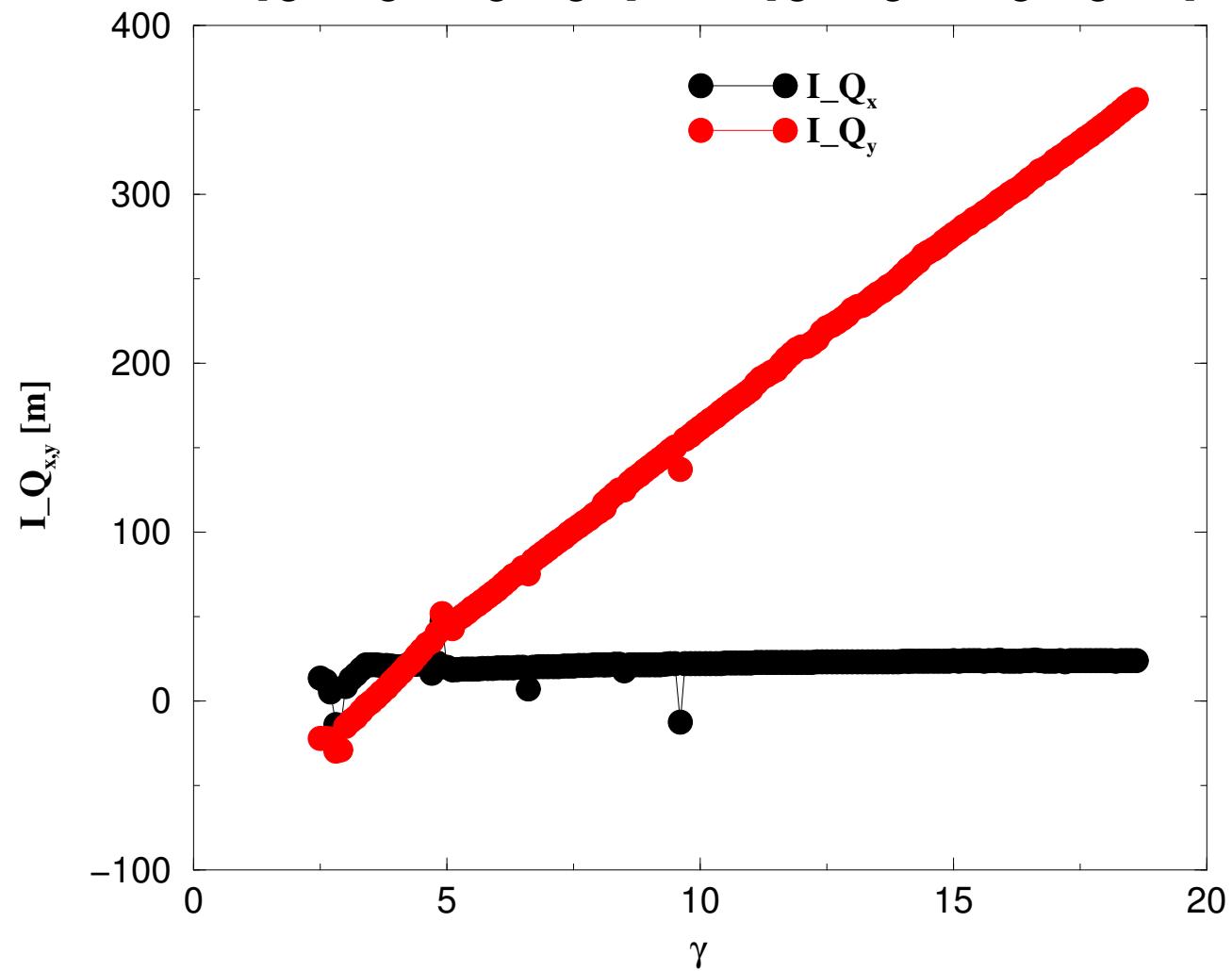


K_1 vs γ

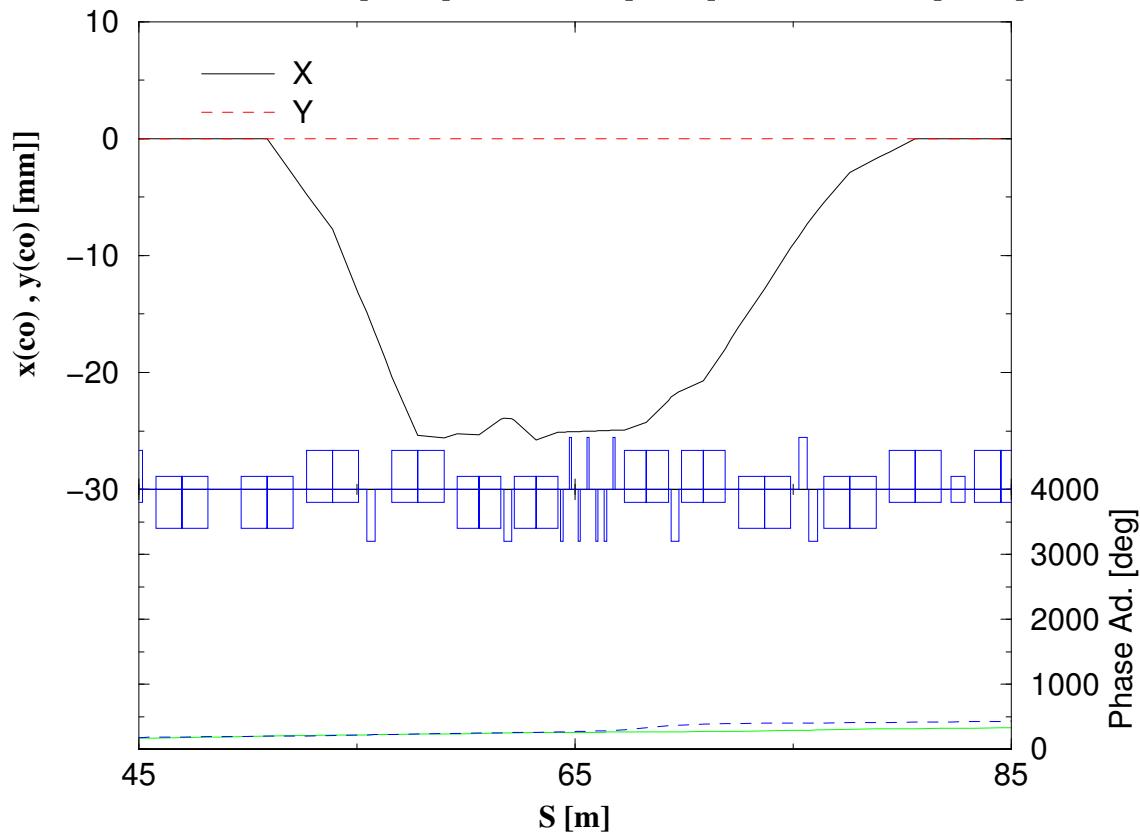


$I_Q_{x,y}$ vs γ

Csnk[QA17 QA19_QB1 QB3] Wsnk[QF17 QF19=-QF1 QF3=0]



X_{cod} vs Dist. Csnk=25 mm A1617_A1819_A20A_B23_B45
A1617_A1819=2.59 [mrad] A20A=3.57 [mrad] B23 B45=0.807 [mrad]



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To Do

- Study stability of the Solution (Range of Quads settings that provide acceptable solutions)
- Does the excitation of QF1 make the solution “better”?
- Study an alternative Solution.
- Other